

A new species of the genus *Araneus* (Araneae: Araneidae) from Hahajima Island, the Ogasawara Islands, Japan

Hajime Yoshida

Yamagata Prefectural Museum, Kajo-machi 1-8, Yamagata-shi, 990-0826 Japan

E-mail: yoshidahaji@pref.yamagata.jp

Abstract — A new species belonging to the family Araneidae is described from Hahajima Island, the Ogasawara Islands, Japan, under the name, *Araneus yoshitomii*.

Key words — spider, *Araneus*, new species, Hahajima Island, Japan

Introduction

The Ogasawara Islands are located 1,000 km from south of Tokyo and consists of about 30 islands. Hahajima Island is the second largest island of them and is one of the two inhabited islands. Ono (2011) recorded 81 species of spiders from the Ogasawara Islands including 46 species from this island. Recently, through the courtesy of K. Takasuka, I obtained some specimens from Hahajima Island collected by H. Yoshitomi in the survey about natural environment of the Ogasawara Islands by the Ministry of Environment. The specimens were collected by the methods of looking, sweeping, beating or sifting.

In this paper, I wish to describe a new species of the genus *Araneus* belonging to the family Araneidae from Hahajima Island. Though 36 species of *Araneus* are recorded from Japan (Tanikawa 2014), no species of this genus have been known not only from this island but also from the other islands of the Ogasawara Islands (Ono 2011). Holotype, two paratypes and a subadult female specimen described in this paper are deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Ibaraki (NSMT).

Abbreviations used in this paper are as follows: ALE, anterior lateral eye(s); AME, anterior median eye(s); MOA, median ocular area; PLE, posterior lateral eye(s); PME, posterior median eye(s). Following abbreviations mean distance between two eyes: AME-ALE; AME-AME; PME-PLE; PME-PME. Measurements of holotype and other specimens are given in mm.

Araneus yoshitomii new species
[Japanese name: Ogasawara-onigumo]
(Figs. 1–6)

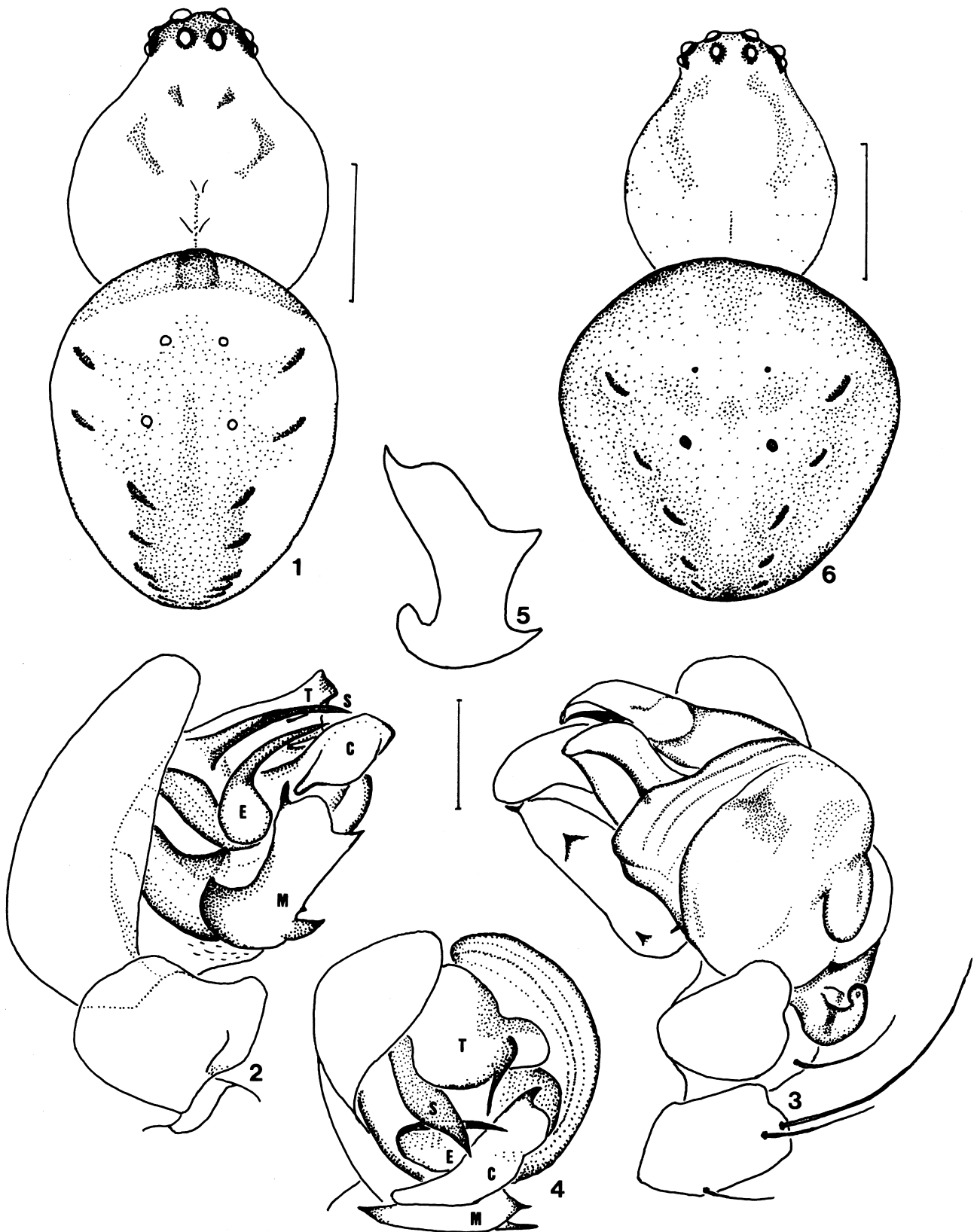
Diagnosis. The present new species resembles *Araneus nojimai* Tanikawa 2001 and *A. tsurusakii* Tanikawa 2001 (cf. Tanikawa 2001, pp. 63–67, figs. 1–4, 9–18; Chikuni

2008, pp. 68, 207, figs. 19–20) described from main islands of Japan, and *A. ryukyuanus* Tanikawa 2001 and *A. iriomotensis* Tanikawa 2001 (cf. Tanikawa 2001, pp. 67–69, 71–72, figs. 5–8, 19–21, 24–25, 32–35) described from the Ryukyu Islands, in general appearance, but can be distinguished from these four species by following characteristics of male palpal organs and colorations (*A. nojimai*, *A. tsurusakii*, *A. ryukyuanus* and *A. iriomotensis* in parentheses): 1) tip of embolus thin slightly curved (strongly curved); 2) median apophysis with three sharpened tips (with two tips; one sharpened and the other one broadened and serrated); 3) subterminal apophysis thin and sharpened (large and sclerotized); and 4) dusky flecks on head region of carapace and annulated legs (without distinct flecks and annulations).

Male (holotype). Carapace longer than wide (length / width = 1.29, Fig. 1). MOA wider than long (length / width = 0.55); wider in front (anterior width / posterior width = 1.27). Chelicera with two large teeth and a small median one on anterior margin of fang furrow and four small ones on posterior. Labium wider than long (length / width = 0.49). Sternum longer than wide (length / width = 1.50). Length of leg I / length of carapace = 5.06. Leg formula, 1, 2, 4, 3. Abdomen longer than wide (length / width = 1.17, Fig. 1).

Palpal organs (Figs. 2–5). Terminal apophysis thin with sclerotized and sharpened appendix (Figs. 2T, 4T). Subterminal apophysis thin, long and sclerotized (Fig. 2S, 4S). Embolus thin and long with oval base (Figs. 2E, 4E). Conductor large ventrally bending with a dorsally sharpened appendix (Figs. 2C, 4C). Median apophysis large with three sharpened tips and a round base (Figs. 2M, 4M, 5).

Coloration (in alcohol, Fig. 1). Carapace light brown with a pair of dusky flecks and white hairs on head region. Chelicerae light brown with dusky flecks; fangs brown. Maxillae and labium light brown. Sternum light brown with pairs of marginal black flecks. Palpus and legs light brown with dusky flecks. Legs: femora with distal ring; tibiae and



Figs. 1–6. *Araneus yoshitomii* new species, ♂ holotype (1–5) and ♀ subadult (6). 1, 6, carapace and abdomen, dorsal view; 2–4, left palp, prolateral (2), retrolateral (3) and apical (4) views; 5, median apophysis of left palp, ventral view. Abbreviations: C, conductor; E, embolus; M, median apophysis; S, subterminal apophysis; T, terminal apophysis. Scales=1 mm (1, 6); 0.2 mm (2–5).

metatarsi with basal, median and distal rings; patellae and tarsi almost dusky. Abdomen: ground color gray; dorsum with anterior dusky flecks, several pairs of black lines and median dusky flecks; venter with dusky flecks near dusky spinnerets.

Measurements (σ holotype). Body length 4.37. Carapace length 2.37; width 1.84. Maxilla length 0.53; width 0.32. Labium length 0.24; width 0.47. Sternum length 1.11; width 0.78. Abdomen length 2.47; width 2.11. Length of legs [total (femur + patella + tibia + metatarsus + tarsus)]: I 12.00 (3.16 + 1.32 + 2.89 + 3.37 + 1.26); II 10.11 (2.79 + 1.16 + 2.37 + 2.74 + 1.05); III 5.21 (1.79 + 0.63 + 1.00 + 1.21 + 0.58); IV 8.04 (2.89 + 0.89 + 1.42 + 2.00 + 0.84). Diameters: AME 0.20; ALE 0.13; PME 0.11; PLE 0.11. Distances: AME-AME 0.18; AME-ALE 0.08; PME-PME 0.11; PME-PLE 0.11. MOA, anterior width 0.47; posterior width 0.37; length 0.26.

Variations (2σ paratypes): Body length 4.58, 4.21. Carapace length 2.58, 2.21; width 1.74, 1.68. Abdomen length 2.68, 2.47; width 2.47, 2.16.

Female (subadult, Fig. 6). Body length 4.11. Carapace length 1.84; width 1.47. Abdomen length 2.63; width 2.47. Carapace length / width = 1.25. Abdomen length / width = 1.06. Dorsum of abdomen almost dusky with distinct black lines. Other characteristics almost same as those of male.

Type series. Holotype: σ , Sekimon (26°41.018'N 142°09.631'E), Hahajima Island, the Ogasawara Islands, Ogasawara-mura, Tokyo, Japan, 1-X-2012, H. Yoshitomi leg. (NSMT-Ar 12895). Paratypes: 1 σ , same data as holotype; 1 σ , Sekimon, 30-IX-2012, H. Yoshitomi leg. (NSMT-Ar 12896-12897).

Other specimens. 1 ϕ subadult, same data as holotype (NSMT-Ar 12898); 1 σ subadult, Sekimon, 30-IX-2012, H. Yoshitomi leg.; 1 σ subadult, Mt. Chibusayama (26°39.581'N 142°09.684'E), 27-IX-2012, H. Yoshitomi leg.

Distribution. Japan: Hahajima Island (the Ogasawara Islands).

Habitat. Collecting sites of specimens, Sekimon and Mt. Chibusayama, are forests with small streams and are not artificially developed.

Etymology. The specific name is dedicated to Associate

Professor Hiroyuki Yoshitomi, Ehime University, who collected the specimens described in this paper.

Remarks. The Ogasawara Islands including Hahajima Island are solitary islands located in north western Pacific Ocean. However, according to Ono (2011), spiders of the Ogasawara Islands are composed 24 species of natural inhabitants (30%) and 57 artificial imported ones (70%) which seem to be transported together with cargo of furniture, seedlings and soil. They have been imported chiefly from main islands of Japan, and the Izu, Ryukyu and Mariana Islands. In Japan excluding the Ogasawara Islands, 36 species of *Araneus* are known (Ono 2011; Tanikawa 2014); while in Micronesia including the Mariana Islands, no species of *Araneus* have been recorded (Platnick 2014). Though many species were introduced to the Ogasawara Islands, at present the new species is not able to be recognized as an artificial imported one.

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